

Summary of 2013 (3rd Quarter) Fatal Accidents at Coal Mines and Preventative Recommendations

During the third quarter of 2013, five miners were killed in accidents in the coal mining industry. Two miners died in **Machinery** accidents. One miner was killed in a **Powered Haulage** accident. Another miner died as a result of a **Rib Fall** accident because of an outburst. One miner **drowned** when the equipment he was operating traveled into an impoundment. We need to work together to prevent additional fatalities.

When completed, a detailed investigation report of each fatality is posted on the MSHA website at: <http://www.msha.gov/fatals/fab.htm>

Here is a brief summary of these accidents:

Two miners were killed in Machinery accidents.

A 28-year-old mechanic with 7 years of experience was killed while checking a suspension strut on a rock truck. He was removing the top cap of the strut when the cap loosened, allowing the truck frame to abruptly drop. The victim was pinned between the top of the right front tire and the bottom of the fender.

A 24-year-old utility person with nearly 3 years of mining experience was killed when the pickup truck he was driving was crushed by an electric shovel. A bulldozer and two pickup trucks were following the shovel while traveling up a grade. The shovel rolled backward down the grade and hit the bulldozer and the two trucks. The driver of the first truck was killed, and the driver of the second truck sustained injuries and was transported to the hospital.

One miner was killed in a Powered Haulage accident.

A 35-year-old continuous mining machine operator with 11 years of mining experience was killed when he was struck by a battery-powered coal hauler and pinned between the coal hauler and the coal rib. The victim was taking a break behind a line curtain in the No. 4 entry and the intersection of the last open crosscut, which was in the haulage route to the continuous mining machine.

One miner was killed in a Rib Fall accident

A 56-year-old continuous mining machine operator with 37 years of mining experience was killed as a result of a coal rib outburst. The section crew was retreat mining when the accident occurred. Two other miners were injured, one seriously.

One miner was killed in a Drowning (Other) accident.

An 87-year-old contract employee was mowing an impoundment embankment with a skid steer machine equipped with a front-mounted brush mower. The victim was mowing the 40 degree embankment in a vertical direction when the

machine traveled into the impounded water, submerging the machine, and drowning the operator.

Best Practices

Effective safety and health management programs save lives. Workplace examinations can identify and eliminate hazards that kill and injure miners. Effective and appropriate training help ensure that miners recognize and understand hazards and how to control or eliminate them.

While some of the specific circumstances of these accidents remain under investigation, here are some of the best practices that can prevent them:

Machinery Accidents

These deaths can be prevented by following well-known precautions:

- Perform maintenance and repairs only after blocking machinery and components against motion.
- Before loosening hydraulic hoses or components, determine if they are supporting something or trapping pressure.
- Ensure warning labels are visible. Check them regularly and replace any labels that are illegible.
- Consult and follow the manufacturer's recommended safe work procedures for the maintenance task, and monitor work to ensure procedures are followed.
- Ensure that safe work procedures are in place for specific tasks, machines, etc.
- Before performing any job, consider all hazards and implement formal procedures that address hazards.
- Ensure that you are positioned in a safe location when performing maintenance and repairs.
- Ensure the grade is within equipment capabilities and equipment braking and steering systems function as designed.
- Establish procedures that require smaller vehicles to maintain a safe distance from large mobile equipment. Provide training in those procedures.
- Use clear communication at all times. Utilize radios to communicate when visual contact cannot be maintained.
- Ensure road widths are sufficient for equipment movement.
- Designate specific roadways or provide alternate routes for light duty vehicles in high activity or congested areas.
- Ensure sufficient clearance is available for equipment movement.

Powered Haulage Accident

This death can be prevented by following well-known precautions:

- Ensure that all persons are positioned to avoid danger from moving equipment. Never position yourself in an area or location where equipment operators cannot readily see you.

- Use proximity detection systems to protect personnel from accidents of this type. See the [proximity detection single source page](#) on the MSHA web site.
- Use transparent curtain for check and line curtains in the active face areas.
- Sound audible warnings when the equipment operator's visibility is obstructed, such as when making turns, reversing direction, or approaching ventilation curtains. Assure that the sound level of audible warnings is significantly higher than that of the ambient noise.
- Energize the lights in the direction of travel when operating haulage equipment.
- Equipment operators should come to a complete stop and sound an audible warning before proceeding through ventilation controls.

Rib Fall Accident

This death can be prevented by following well-known precautions:

- Ensure that the approved roof control plan support provisions are suitable for the geological conditions at the mine and that the plan is followed.
- Ensure that the pillar dimensions and mining method are suitable for the conditions.
- Ensure that roof and rib control methods are adequate for the depth of cover and for the potential effects of any mines above or below active workings.
- Develop a map of geological features and anomalies to determine orientation as a means to predict when and where they will be encountered during mining, so additional roof support can focus on those areas.
- Conduct frequent and adequate examinations of roof, face, and ribs. Be alert for changing conditions. When hazardous conditions are detected, danger off access to the area until it is made safe for work and travel.
- Maintain proper entry widths and pillar dimensions.
- When gob falls have been delayed for periods that exceed routine intervals for the mining conditions, evaluate the area and consider evacuating miners and equipment to a safe area until the fall occurs.

Drowning Accident

This death can be prevented by following well-known precautions:

- Conduct a risk assessment prior to performing work and ensure that miners use proper equipment, tools, and procedures to eliminate hazards.
- Provide hazard training to all personnel working on or near an impoundment for recognition of hazards associated with the impoundment.
- Set up a communications protocol when persons are working alone.
- Wear properly fitted personal floatation devices (PFD) when working around bodies of water.

- Never assume an employee is knowledgeable in the task they are being assigned

Violations of the priority standards identified as **Rules to Live By** continue to play key roles in mine fatalities. While the mine site portion of the fatality investigations have been completed, not all of the violations have been identified, and not all of the associated citations and orders have been issued, it currently appears that violations of the Rules to Live By standards were still involved in several of those fatalities. MSHA's inspectors will be especially mindful of these issues while performing inspections. They will be talking to miners and mine supervisors in mines throughout the country to discuss these kinds of fatalities, and the ways to prevent them.

Contractors

One contractor was killed at coal mining operations in the third quarter of 2013. Contractors and mine operators should ensure that contractor employees are properly trained and follow the mine's safety policies and procedures. Contractors and mine operators should coordinate operations at the mine to ensure that safety and health management programs are in place and are effective, all workplace examinations are performed, and safe work procedures are followed.

The importance and value of effective **safety and health management programs** cannot be overstated. A thorough, systematic review of all tasks and equipment to identify hazards is the foundation of a well-designed safety and health management program. Modify equipment, processes, work procedures and management systems to eliminate or control identified hazards. Operators and contractors should create effective safety and health management programs, ensure that they are implemented, and periodically review, evaluate, and update them.

If an accident or near miss does occur, find out why and act to prevent recurrence. If changes to equipment, materials or work processes introduce new risks into the mine environment, address them immediately.

Conducting **workplace examinations** before beginning a shift and during a shift – every shift – can prevent deaths by finding and fixing hazards. All required workplace examinations must be performed and identified hazards eliminated to protect miners.

Providing effective and appropriate **training** to miners is a key element in ensuring their safety and health. Mine operators and Part 48 trainers need to train all miners to recognize the conditions that lead to deaths or injuries and ensure that measures are taken and followed to eliminate hazardous conditions. Training all miners to follow safe work procedures and stay focused on the task they are performing cannot be stressed enough.

Miners deserve a safe and healthy workplace and the right to go home safe and healthy at the end of every shift, every day. Working together makes that happen.